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09/751,155	12/27/2000	Daigo Yoshioka	15162/03030	8696

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EXAMINER

HENN, TIMOTHY J

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/751,155

Applicant(s)

YOSHIOKA ET AL.

Examiner

Timothy J Henn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09751155, filed on December 27, 2000.

### ***Drawings***

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the use of legal phraseology. Correction is required. See MPEP § 608.01(b).
4. The examiner notes that the legal phraseology "means" is used multiple times in the abstract, and that the abstract is not written in narrative form. The examiner also notes that starting the abstract with "The digital camera" is improper because it gives the impression that it is referring back to a previously discussed digital camera.
5. The disclosure is objected to because of the following informalities:
  - i. On page 4, line 14: The LCD is incorrectly referred to as item number 5 on figure 2. The LCD on figure 2 is actually item number 19.
  - ii. On page 6, line 15: In the sentence "external light entering from the finder is preventing from advancing...", "preventing" is the wrong tense and should be changed to "prevented".
  - iii. In the brief description of drawings, pages 7-9, the descriptions for figures 2, 4 and 7 call the figures "a cross section view of the essential part of the liquid crystal semi-transparent mirror of FIG. # in the retracted state." The figures in question show a cross section of the camera at a time when the LC mirror is in a retracted state, not a cross section of the mirror itself as suggested by the description.

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- iv. On page 16, line 14: At the end of the sentence the word "is" is misspelled "ix".
- v. On page 26, lines 6-9: The sentence "And in step #146, the continuous photography may execute among the switch S2 is closed instead of the determination of taken number of photographs" is confusing. As best understood, the examiner recommends changing "among" to "as long as" in the sentence in question. The examiner also notes that this sentence is out of order and should be moved to the area where step #146 is discussed (page 24).
- vi. On page 29, line 11: The start of the paragraph "FIG. 12 is a flowchart is the mode..." is grammatically incorrect. The examiner recommends changing the sentence to "FIG. 12 is the flowchart of the mode..." as was used in previous paragraphs describing flowcharts.

Appropriate correction is required.

#### ***Claim Objections***

- 6. Claim 6 is objected to because of the following informalities:
  - i. The word "sensing" on line 7 is in the wrong tense. The examiner recommends changing it to "senses".

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

- 7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 3, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (US 4,626,918) in view of Hori (US 5,860,034).

9. In regard to claim 1, in figure 1 Morisawa discloses a camera comprising a taking lens (item 11), an image sensor (item 16), a finder (item 19), a moveable light splitter (item 14) and a driver to move the light splitter as needed (not shown), therefore, it can be seen that Morisawa lacks a controller to change the light splitter from a semi-transparent state to a blocking state when the light splitter is moved to a second position. Hori teaches a liquid crystal (LC) shutter system placed within the optical path of the finder eyepiece can be used to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure" (column 11, lines 50-59). Hori also teaches that the LC shutter itself can be placed "anywhere, so long as light entering from the finder eyepiece window can be prevented from arriving at the photometry light-receiving element" (column 11, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the LC shutter system with the light splitter in the camera design of Morisawa to allow the light splitter to change from a transparent state in a first position to a blocking state in a second position as claimed in order to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure."

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10. For the purpose of art rejection, the examiner reads claim 2 as "A camera according to claim 1, wherein said light splitter *comprises* a liquid crystal plate of variable transmittance. The claim, as written, says "wherein said light splitter *is* a liquid crystal plate", this is not consistent with the specification given (see for example page 6, lines 20-21).

11. In regard to claim 2 as read, Morisawa discloses a camera comprising a taking lens, an image sensor, a finder, a moveable light splitter and a driver to move the light splitter as needed, therefore it can be seen that Morisawa lacks a light splitter comprising a LC plate having variable transmission. Hori teaches a liquid crystal (LC) shutter or "liquid crystal plate of variable transmittance" placed within the optical path of the finder eyepiece can be used to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure" (column 11, lines 50-59). Hori also teaches that the LC shutter can be placed "anywhere, so long as light entering from the finder eyepiece window can be prevented from arriving at the photometry light-receiving element" (column 11, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a LC shutter or "liquid crystal plate of variable transmittance" in the camera of Morisawa as claimed in order to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure."

12. In regard to claim 3, Morisawa discloses a camera comprising a taking lens, an image sensor, a finder, a moveable light splitter and a driver to move the light splitter as

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needed, therefore, it can be seen that Morisawa lacks a light splitter providing an LC plate having variable transmission on a semi-transparent mirror. Hori teaches a liquid crystal (LC) shutter or "plate" placed within the optical path of the finder eyepiece can be used to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure" (column 11, lines 50-59). Hori also teaches that the LC shutter can be placed "anywhere, so long as light entering from the finder eyepiece window can be prevented from arriving at the photometry light-receiving element" (column 11, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a LC shutter or "plate" directly on the semi-transparent mirror of Morisawa as claimed in order to "prevent external light from entering into the main body of the camera through the finder eyepiece window at the time of metering operation and/or exposure."

13. In regard to claim 9, Morisawa discloses a system for moving a semi-transparent mirror or "light splitting device" to a second position (figure 1) during the exposure stage of taking a photograph, therefore it can be seen that Morisawa lacks a method for changing the transparency of the light splitting device once it is moved into the second position. Hori teaches that an LC shutter can be added which can be changed to a non-transparent state during the exposure stage of taking a photograph in order to block light from entering the camera body to improve image quality and reduce flare effects (column 11, lines 50-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an LC shutter to the semi-transparent mirror of Morisawa to create a "light splitting device" which is able to change its transparency,



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and to combine the methods of Morisawa and Hori to move the semi-transparent mirror and to open and close the LC shutter at the same time to provide a method of controlling the "light splitting device" to a semi-transparent state (LC shutter open) when in the first position, and a blocking state (LC shutter closed) when in a second position as claimed.

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (US 4,626,918) in view of Hori (US 5,860,034) as applied to claim 1 above, and further in view of Iwamoto (US 6,249,650).

15. As applied to claim 1, Morisawa in view of Hori discloses a single lens reflex camera comprising a taking lens, an image sensor, a finder, a moveable light splitting device, a driver to move the light splitting device as needed and a controller to change the light splitting device from semi-transparent in the first position to non-transparent or blocking in the second position, therefore it can be seen that Morisawa in view of Hori lacks a switch to move the light splitting device from the second position to the first position. Iwamoto discloses a camera with a mirror or "light splitting device" control switch (figure 2, item 17) that allows the user to manually change the position of the mirror or "light splitting device" between a first position and a second position. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a mirror or "light splitting device" control switch to the design of Morisawa in view of Hori as applied to claim 1 to allow the user to move the mirror or "light splitting device" from the second position to the first position by operating a switch as claimed.

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16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (US 4,626,918) in view of Hori (US 5,860,034) as applied to claim 1 above, and further in view of Sakaegi (US 6,266,083).

17. As applied to claim 1, Morisawa in view of Hori discloses a single lens reflex camera comprising a taking lens, an image sensor, a finder, a moveable light splitting device, a driver to move the light splitting device as needed and a controller to change the light splitting device from semi-transparent in the first position to non-transparent or blocking in the second position, therefore it can be seen that Morisawa in view of Hori lacks a light splitter that remains at a second position while the sensor continuously senses a plurality of images. Sakaegi teaches a system where a mirror retracts to a second position out of the way of the sensor's optical path while the sensor is sensing a plurality of images (figure 4b, column 9, line 43 through column 10, line 36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the mirror system of Sakaegi to the camera of Morisawa in view of Hori to allow the camera to sense a plurality of images without returning the mirror to the first position between each image as claimed.

18. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (US 4,626,918) in view of Hori (US 5,860,034) as applied to claim 9 above, and further in view of Shi (US 5,150,215).

19. In regard to claims 4 as broadly as claimed, Morisawa in view of Hori discloses a camera that meets the conditions set forth in claim 1 as discussed above, therefore it can be seen that Morisawa in view of Hori lacks a light splitter that "provides a display

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which is able to display an image sensed by the image sensor". Shi teaches a mirror system, which can provide a display to both an image sensor (position one, figure 4b) and a user (position two, figure 4a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mirror system of Shi with the camera of Morisawa in view of Hori to allow a user and image sensor to view the same image (assuming that the camera is not moved).

20. In regard to claim 10 as broadly as claimed, Morisawa in view of Hori discloses a camera that meets the conditions set forth in claim 9 as discussed above, therefore it can be seen that Morisawa in view of Hori lacks a method that "displays an image sensed by the image sensor on the splitter when the splitter is in the second position". Shi teaches a mirror system, which can provide a display to both an image sensor (position one, figure 4b) and a user (position two, figure 4a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mirror system of Shi with the camera of Morisawa in view of Hori to allow a user and image sensor to view the same image (assuming that the camera is not moved).

21. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morisawa (US 4,626,918) in view of Hori (US 5,860,034) in further view of Sakaegi (US 6,266,083) as applied to claim 6 above, and further in view of Shi (US 5,150,215).

22. In regard to claim 7 as broadly as claimed, Morisawa in view of Hori in further view of Sakaegi discloses a camera that meets the conditions set forth in claim 5 as discussed above, therefore it can be seen that Morisawa in view of Hori in further view of Sakaegi lacks a method that "displays an image sensed by the image sensor on the

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splitter when the splitter is in the second position". Shi teaches a mirror system, which can provide a display to both an image sensor (position one, figure 4b) and a user (position two, figure 4a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mirror system of Shi with the camera of Morisawa in view of Hori to allow a user and image sensor to view the same image (assuming that the camera is not moved).

23. The examiner notes that there is a difference between the teaching of Shi and the *intended* meaning of claims 4, 7 and 10. However, as broadly as claims 4, 7 and 10 are written it is possible to interpret claims 4, 7 and 10 to mean a system such as that used by Shi. The examiner suggests rewriting the claim by substituting "electronic display" for display, adding "simultaneously" to the end of the claim or by some other appropriate measure.

#### ***Allowable Subject Matter***

24. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

25. The prior art does not teach of fairly suggest a method for a camera to maintain a light splitter at a second position for a specific time after the image sensor senses an image, during which time the light splitter provides a display that displays the image sensed by the image sensor.

#### ***Conclusion***

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26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents relate to the current state of the art in single lens reflex cameras and systems for optic viewfinders.

- a. Phillips US 5,029,989
- b. Inuma US 6,549,237
- c. Um US 5,854,657

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Henn whose telephone number is (703) 305-8327. The examiner can normally be reached on M – F 7:30 AM - 5:00 PM, alternate Fridays off.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and for After Final communications.

29. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Timothy James Henn  
August 8, 2003

  
NGOC-YEN VU  
PRIMARY EXAMINER